ABSTRACT

An arrangement which utilizes an inexpensive flap valve/flow transducer combination and a simple local supervisory control system to monitor and/or control the operation of a positive displacement pump used to extract petroleum from geologic strata. The local supervisory control system controls the operation of an electric motor which drives a reciprocating positive displacement pump so as to maximize the volume of petroleum extracted from the well per pump stroke while minimizing electricity usage and pump-off situations. By reducing the electrical demand and pump-off (i.e., "pounding" or "fluid pound") occurrences, operating and maintenance costs should be reduced sufficiently to allow petroleum recovery from marginally productive petroleum fields. The local supervisory control system includes one or more applications to at least collect flow signal data generated during operation of the positive displacement pump. No flow, low flow and flow duration are easily evaluated using the flap valve/flow transducer arrangement.